

Abstract

**METHOD AND APPARATUS FOR ORIENTING SEMICONDUCTOR WAFERS
IN SEMICONDUCTOR FABRICATION**

A description is given of a method for orienting a semiconductor wafer (W) during semiconductor fabrication with the aid of an optical alignment system (10), the semiconductor wafer (W) having an alignment mark (M) with regular structures (M_1 , M_2 , M_3), on the basis of which the position of the semiconductor wafer (W) can be determined, having the following method steps:

- e) determination of a first position information item (x_1 , y_1) of the alignment mark (M) in a predetermined direction (X, Y) with the aid of an optical measurement method that is optimized for position determination;
 - f) determination of a line profile (S_A) of the alignment mark (M) in the predetermined direction (X, Y) with the aid of an optical measurement method that is optimized for profile determination;
 - g) determination of a second position information item (x_2 , y_2) of the alignment mark (M) in the predetermined direction (X, Y), the first position information item (x_1 , y_1) determined in method step a) being corrected with the aid of the line profile (S_A) of the alignment mark determined in method step b); and
- use of the second position information item (x_2 , y_2) of the alignment mark (M) for a positioning and/or a modeling of the semiconductor wafer (W).

Figure 3